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Final Report:

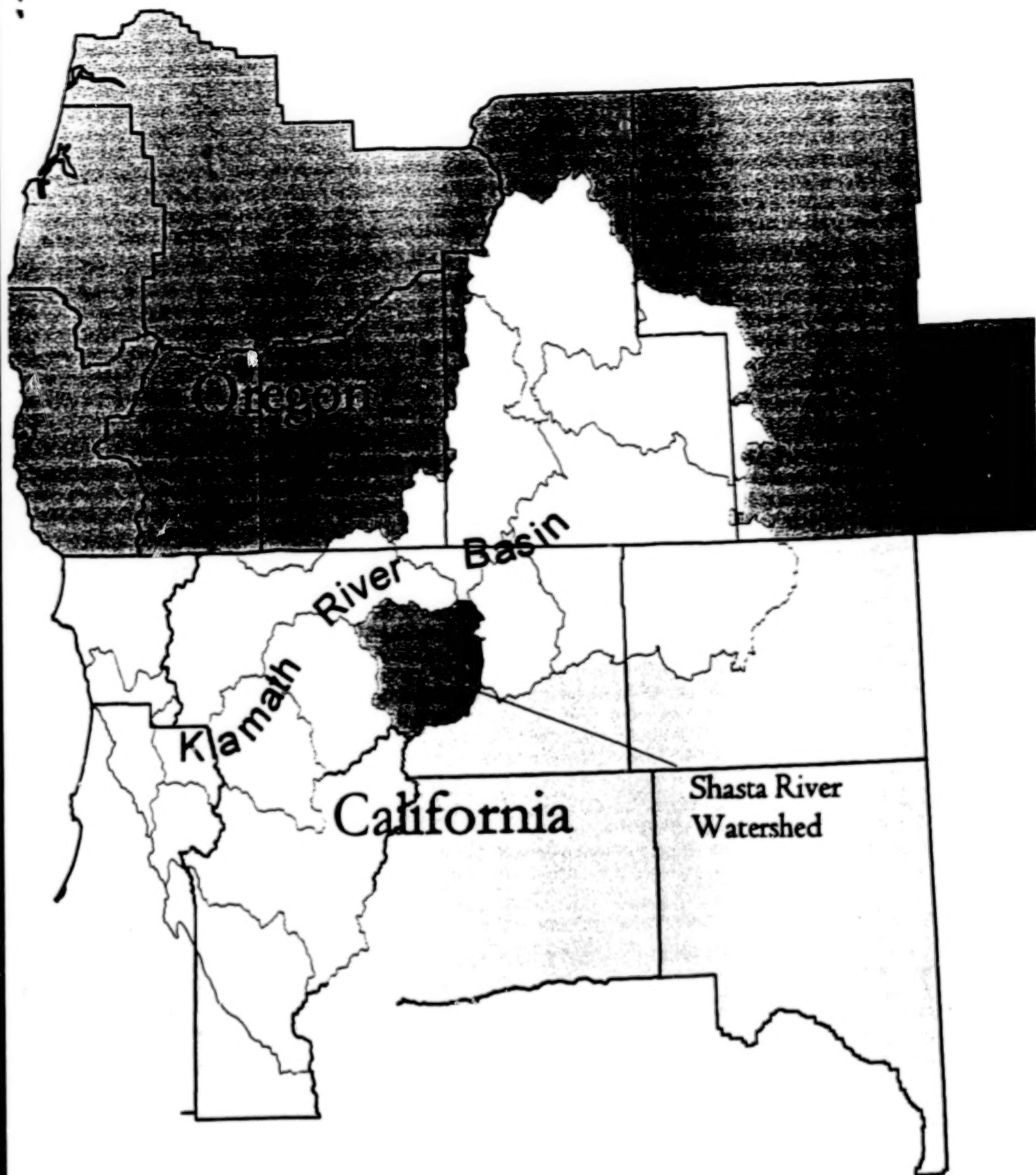
Shasta CRMP Coordinator
Calendar Year 1999

Submitted by:
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Cooperative Agreement # 14-48-11333-99-J041
Project Number 99-PC-02
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Final report: Shasta River CRMP Coordinator, FY 1999

Cooperative Agreement #14-48-11333-99-J041
99-PC-02

Abstract:

The Shasta CRMP has been engaged in fisheries habitat restoration work since 1991. 1999 included community outreach, ongoing meetings with landowners, agencies and political figures, work with developers of the Klamath Resource Information System (KRIS) program, pulsed flow preparation, fish screen investigations, Internet access to real time flow data, and the preparation and oversight of restoration projects. An array of other tasks were done as need and opportunity allowed.

Introduction

The Shasta River Coordinated Resources Management and Planning group (CRMP) was started in mid-1991, through the combined efforts of several members of the ranching community, the Siskiyou RCD, and the Natural Resources Conservation Service (then Soil Conservation Service). At that time there was no similar organization in Siskiyou County, and the prospect of developing a good working relationship amongst the various landowners and agencies seemed unlikely.

Given the magnitude of the task undertaken—to restore the productivity of the Shasta, while maintaining a healthy local agricultural economy—it was clear that efforts beyond what a volunteer group was capable of were required. Recognizing this, the Klamath River Basin Fisheries Task Force provided funding in FY 1992 for a part time Projects Coordinator to assist the CRMP in progressing from discussion, self-education and planning to project implementation, grant funding and community outreach.

That funding has been renewed at varying levels in FY 1993, 1995, 1996, 1997, 1998, 1999 and 2000.

Description of Study Area

The Shasta River and its major tributaries are part of the Klamath Basin, and total hundreds of miles in length, draining an area of approximately 800 square miles (see maps). They flow almost entirely through relatively small parcels of private ranch land. To be effective, any activity aimed at improving water quality for fish or human needs must be done with the active help and participation of a large number of individual owners whose needs, desires and financial conditions vary greatly.

Each of these ranchers has long-standing cultural practices, many of which depend on the river, including irrigation of pasture and hay fields, grazing of riparian areas, and watering of livestock. All of these activities can have a substantial impact on water quantity and quality.

Historically the Shasta River was an important spawning and rearing area for Chinook and Coho Salmon, and Steelhead. Records of Fall Chinook spawners kept since the 1930's show a long decline, from over 80,000 in 1931 to as few as 530 in 1992. Since 1992, numbers have climbed to as high as 13,000. Steelhead and Coho are likewise no longer present in significant numbers, although actual counts are not available.

Over the last ten years there has been an extensive program of water testing in the Shasta. Results indicate significant problems for cold water fish resulting from high water temperatures and low levels of dissolved oxygen. Additional fieldwork indicates severe problems of fine sedimentation. Other observed but less well documented problems include: blockage of coarse sediment by dams, groundwater withdrawals capable of affecting surface flows, high nutrient levels and consequent turbidity caused by free-floating algae.

The Shasta CRMP has developed a variety of responses to these problems.

Methods and Materials:

The Shasta CRMP serves generally as a broad oversight body, with the details of implementation of its goals left to the project coordinator. The coordinator works with individual CRMP members, agencies, and other groups and individuals to develop and implement specific actions that will further the CRMP's goals. In addition, the CRMP Coordinator must be available to respond to requests for assistance from the USFWS, TWG and Task Force, along with state agencies (including DFG and DWR), schools, and other restoration workers.

Information transfer and reporting is frequently accomplished verbally at CRMP meetings or to individuals, in written form in newsletters and agendas, electronically via email, and photographically. Most residents of the Shasta Valley do not make routine use of computers, so mailings and verbal reporting is the most effective way to communicate with them. Agencies and persons engaged in restoration planning generally all have ready access to computers and the Internet, making electronic data and document transfer their preferred method.

Project documentation has been done using photographs and slides, some of which have also been scanned for use electronically on the Internet or in the KRIS.

Post project monitoring and documentation, and responding to needs and opportunities as they arise can require almost anything by way of methods and materials. An engineering autolevel, steel T posts, hacksaw and post driver are used in setting up stream cross section profile locations; Hammer, nails, boards, shovels and tarps were used in sealing off an abandoned ditch; Arcview software, plotter and laptop computer were needed to prepare the presentation for Congressman Herger, etc.

Results and discussion of accomplishments:

Successfully meeting the overarching goal of this grant--assisting the Shasta CRMP to continue to make substantial steps towards restoring the Shasta River for salmonids--required a variety of approaches. General activities included

- Coordination of fieldwork, both paid and volunteer
- Meeting with interested parties, both individually and in groups,
- Assisting with planning both within the Shasta Watershed and elsewhere in the Klamath Basin,
- Meeting with Task Force and its technical work group,
- Responding to problems and opportunities as they arose

This grant included a number of defined tasks to be completed, each of which will be described separately below:

Task 1—continue landowner contacts:

Throughout the 1999, contacts with landowners were maintained in a variety of ways, including newsletters and meeting agendas, which were mailed to all landowners bordering the Shasta or its tributaries, along with other interested parties, providing basic information on meetings, topics under discussion, and projects worked on. Mailings were sent to over 400 people, most of whom were farmers or ranchers in the Shasta Valley.

We maintained operation of Shasta telephone accessible river monitoring station (530-459-0416) for use by landowners in Shasta Valley and other interested parties. That station provides both verbal and electronic reporting of air and water temperatures, and river stage height. It also records conductivity and solar intensity.

Direct contact was concentrated on those individuals most interested in developing actual projects aimed at river improvements.

Additional contacts with other landowners were made via telephone, individual letters and direct contact.

Task 2: Schedule and arrange at least two Public Meetings:

We substantially exceeded goals in this category. Among the public meetings held were 4 CRMP meetings, two public informational meetings where the DFG explained the workings of the new 1603 stream alteration permit process as it related to irrigation dams and diversions, and two public meetings/workshops for ranchers wanting to prepare Rangeland and Water Quality Management Plans for their ranches.

Task 3—Prepare a minimum of 6 project proposals for restoration activities:

We substantially exceeded goals in this category also. Grants prepared included:

Klamath River Task Force:

- CRMP Coordinator
- Flow/temperature Model for Shasta River
- Irrigation Efficiency Improvements Through Soil Moisture Monitoring
- Cardoza Fish Screen
- Kuck Bioengineered Bank Protection
- Preliminary Engineering Study for Efficiency Measures to Reduce Water Usage by Shasta Water Assoc.
- Preliminary Engineering Study to Examine Options and Costs for Flashboard Dam Removal in Shasta
- Cost Share for USGS Shasta River Gauge
- Fiock Bioengineered Bank Protection

Cal DFG

- CRMP Coordinator
- Willow Matting Bank Stabilization on Kuck Property.
- Preliminary Engineering Study for Efficiency Measures to Reduce Water Usage by Shasta Water Assoc.
- Preliminary Engineering Study to Examine Options and Costs for Flashboard Dam Removal in Shasta
- Cost Share for USGS Shasta River Gauge
- Flow/temperature Model for Shasta River
- Irrigation Efficiency Improvements Through Soil Moisture Monitoring
- Cardoza Fish Screen
- Parks Creek Fine Sediment Sources Assessment
- Shasta River Coarse Sediment Assessment
- Fiock Bioengineered Bank Protection

USFWS Ecosystem Restoration Office

- Water Quality Monitoring
- Generic Livestock Exclusion Fencing

Cantara Trust

- Dissolved Oxygen Monitoring in Shasta
- Temperature Monitoring in Shasta

Presidents Salmon Initiative/5 Counties Planning Group

- Shasta Flow Temperature Model
- Emergency Response Planning for Droughts
- Outmigrant counting
- Preliminary Engineering Study for Efficiency Measures to Reduce Water Usage by Shasta Water Assoc.

Partners In wildlife

- Meamber Wetlands Protection Fencing

Of these, funding was secured for CRMP Coordinator, Cardoza Fish Screen, Kuck Bank Protection, Fiock Bank Protection, Flashboard Dam Removal Study, USGS Gauge, Parks Creek Fine Sed., Dissolved Oxygen Monitoring, Temp. Monitoring and Meamber Wetlands. Total funds secured: \$265,800

In addition, the Shasta CRMP was instrumental in securing a \$50,000 grant from DWR to DFG for equipment to use in monitoring salmonid outmigrants from the Shasta.

Task 4--Prepare digital map of riparian landowners along the Shasta River

Again, we exceeded goals on this task. As part of our ongoing GIS/mapping, we completed this task as specified, and further work was then begun on more extensive parcel mapping of the entire Shasta Watershed to facilitate future full watershed restoration planning. The Shasta CRMP Coordinator participated in the planning of Siskiyou County's implementation of conversion to Arcview/Arcinfo as part of this process. By the end of the first quarter of calendar year 2000 we had completed an Arcview coverage with parcel numbers, owners names and addresses for all 13,000 parcels in the entire watershed. See attached map.

Task 5--Inventory sites where Aquatic Invertebrates have been sampled by state and federal agencies in the past.

This task was completed. See attached list and map.

Task 6. Produce at least 8 newsletters.

This target was not fully met. Only 6 newsletters were produced.

While the Coordinator Grant included the above defined deliverables, it also included sufficient funding to allow pursuing needs and opportunities as they arose. This flexibility allowed the Shasta CRMP Coordinator to initiate a variety of actions to address opportunities that could not have been predicted in advance. Additional tasks identified and addressed in the course of the year included:

1. Meeting with and assisting the Yreka High School to transition management of its native Plant nursery to new staff
2. Providing all support to county wide effort to develop a Conservation Reserve Enhancement Program (CREP) focused on riparian protection.
3. Attending 3 TWG meetings.
4. Participate in BOR led Flow Study meetings
5. Meet with fish screen fabricators in Red Bluff, Orland, and Medford to evaluate alternative fish screen designs

6. Provide Shasta Watershed Orthophoto Quads to Yreka High School, help with their integration into existing High School programs.
7. Close off the abandoned Oregon and California Power-plant Canal.
8. Prepare for Pulsed Flows for 1999
9. Work closely with newly-hired Natural Resources Planner for Siskiyou county to introduce him to the complexities of fishery restoration in Siskiyou County.
10. Initiate meetings with key private landowners, timber companies, and supervisors to initiate plans to begin addressing TMDLs for the Shasta.
11. Provide extensive comments to Kier and Assoc. re: 10 year Review.
12. Prepare request to Calif. Fish and Game Commission to investigate adequacy of existing fishing closure at mouth of Shasta based on newly available habitat typing data from USFWS. See attached report.
13. Begin investigation of fish screen materials with anti-fouling properties for Meamber Screen.
14. Ram-rod agreement between BOR and DWR to allow DWR to use BOR GOES Satellite access license for flow gauging in Shasta River. Flows and temperatures watermaster's weir now on internet in near real time. See attached printout.
15. Meet several times with NMFS engineer to field test tube screen baffle designs.
16. Tour Shasta Restoration projects with new reporter for Siskiyou Daily News.
17. Assist with further development of KRIS.
18. Work with DFG Biologist to design and build 3 fish screens (work completed in 2000).
19. Revive DWR offer of cash assistance for Shasta River. Eventually secure \$50,000 for outmigrant counting, along with commitment of future help.
20. Participate in RWQCB tour of Shasta Valley. Make presentation to RWQ Board.
21. Initiate sub-committee process to list and prioritize all known limiting factors for salmonids in Shasta watershed. Sub-committee made up of 4 DFG Biologists, Sisk. Co. Nat Res. Planner, USFWS Biologist, Consulting Hydrologist, plus Shasta CRMP Coordinator and HSU masters student. Draft matrix attached.
22. Provide slide presentation to Klamath Compact Commission on Shasta River.
23. Meet with Congressman Herger and his staff to discuss restoration and secure his support for presidents Salmon Initiative funding.
24. Work with Yreka High School and Discovery High School to record stream cross section profiles at Meamber and Fiock Ranches.
25. Maintain DWR satellite up-link though winter to provide year-around reporting of flows.
26. Make preliminary measurements of electrical field generated by DFG counting weir in Shasta River.
27. Arrange for donation of lab space and transfer of equipment from College of the Siskiyou's for water quality work.
28. Do all preliminary and oversight work required for three livestock exclusion projects, one tailwater capture and reuse project, and one off-stream stockwater project.

Summary and Conclusions:

Prior to 1987, little salmonid restoration work had been done in the Shasta Watershed other than the construction and maintenance of approximately 10 fish screens, 4 fish ladders and the creation of 4 enhanced spawning sites. With the creation of the Shasta CRMP by landowners in the Shasta Valley in 1991, and the availability of funding for a part-time CRMP Coordinator who could develop restoration project ideas and secure funding for their implementation, things began to happen.

Task Force funding has been requested and received in 1992, 93, 95, 96, 97, 98, 99 and 00. In most years, \$25,000 was all that could be allocated to the Shasta River, and the pace of work was adjusted to live within this budget. Because of delays in the congressional allocation process, in contract writing, and lead time on reimbursements, we have gone into each year with a substantial carry-over of funds from the previous years grant, thereby allowing work to proceed without interruption. In 1998, the funding level was increased to \$33,000, leaving a larger carry-over than usual.

In 1999, we decided to use the additional carryover money plus the majority of the grant received for 1999 to add staff and increase the efforts expended.

The total spent on project coordination in 1999 was \$38,950, and the results achieved were clearly indicative of what could be done on a regular basis with additional funding in the Shasta Valley:

- * Nearly \$266,000 in grant funds were secured.
- * Most deliverables were substantially exceeded.
- * Ground work was laid for future work in the form of support for additional funding from our Congressman
- * Expanded outreach to Shasta Valley landowners resulted in a substantial number of restoration projects proposed in both 1999 and 2000, most notably in the Little Shasta and Parks Creek, areas largely unserved prior to 1999.
- * A formal Limiting Factor prioritization process was substantially completed to guide future work, assist in securing outside funding, and supplement the *Shasta Watershed Restoration Plan*.
- * Funding was secured to allow the DFG to begin systematically counting outmigrants from the Shasta, a critical step in developing an outmigrant index to show population trends.

On the other hand, even with this level of funding, some work had to be set aside. The greatest disappointment was the inability of the CRMP Coordinator to carry the workload associated with developing a Conservation Reserve Enhancement Program for Siskiyou County. The members of the committee working on it wished to continue with its development, in the belief that it would be the cornerstone of future Farm Bill funding for restoration work throughout Siskiyou county, and possibly much of the rest of the state. Despite the great potential it held, it ultimately was abandoned.

Monitoring of water quality using aquatic invertebrates was largely also left un-done, continuing the high level of uncertainty of the overall health of the aquatic environment.

While preliminary meetings were held on TMDL issues, inadequate progress was made, again for lack of staff time, despite the desire of landowners involved in the preliminary meetings to participate.

Lack of local support, resulting primarily from lack of CRMP staff to do necessary outreach, led to the collapse of efforts by Dr. Hardy to collect Shasta Valley data related to the flow study he was working on elsewhere in the Klamath Basin.

SHASTA RIVER NEAR MONTAGUE (SRM)

Elevation: 2426' · SHASTA R basin · Operator: CA Dept of Water Resources

Query executed Monday at 11:18:14



Select data type to plot recent data.

Date Time (PDT)	RIV STG FEET	FLOW CFS	TEMP W DEG F	BAT VOL VOLTS
<u>Earlier</u>				
2000 06/04 00:00	1.97	94	70.2	12.8
2000 06/04 01:00	1.97	94	69.4	12.8
2000 06/04 02:00	1.97	94	68.6	12.8
2000 06/04 03:00	1.97	94	67.7	12.8
2000 06/04 04:00	1.97	94	66.8	12.8
2000 06/04 05:00	1.96	91	65.8	12.8
2000 06/04 06:00	1.96	91	64.8	12.7
2000 06/04 07:00	1.96	91	63.7	12.7
2000 06/04 08:00	1.96	91	62.8	12.8
2000 06/04 09:00	1.96	91	62.3	12.9
2000 06/04 10:00	1.96	91	62.3	13.4
2000 06/04 11:00	1.96	91	62.9	13.3
2000 06/04 12:00	1.96	91	63.9	13.0
2000 06/04 13:00	1.96	91	65.3	13.1
2000 06/04 14:00	1.96	91	66.8	13.6
2000 06/04 15:00	1.96	91	68.2	13.1
2000 06/04 16:00	1.96	91	69.5	13.0
2000 06/04 17:00	1.96	91	70.3	13.2
2000 06/04 18:00	1.96	91	70.8	13.0
2000 06/04 19:00	1.96	91	70.7	13.4
2000 06/04 20:00	1.96	91	70.5	13.3
2000 06/04 21:00	1.96	91	70.2	13.1
2000 06/04 22:00	1.96	91	69.8	13.0
2000 06/04 23:00	1.96	91	69.3	12.9
<u>Later</u>				
<u>Latest</u>				

Warning! This data is preliminary and subject to revision.

[Show SRM Map](#) | [24 Hours SRM Data](#) | [Plot all SRM Sensors](#) | [Daily SRM Data](#) | [SRM Info](#)

[Real-Time Data](#) | [Group of Real-Time Stations](#) | [Daily Data](#) | [Group of Daily Stations](#)

California Department of Water Resources

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[Reservoir Data/Reports](#)

[Satellite Images](#)

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[Precipitation/Grow](#)

[River/ Lake Forecasts](#)

[Water Supply](#)

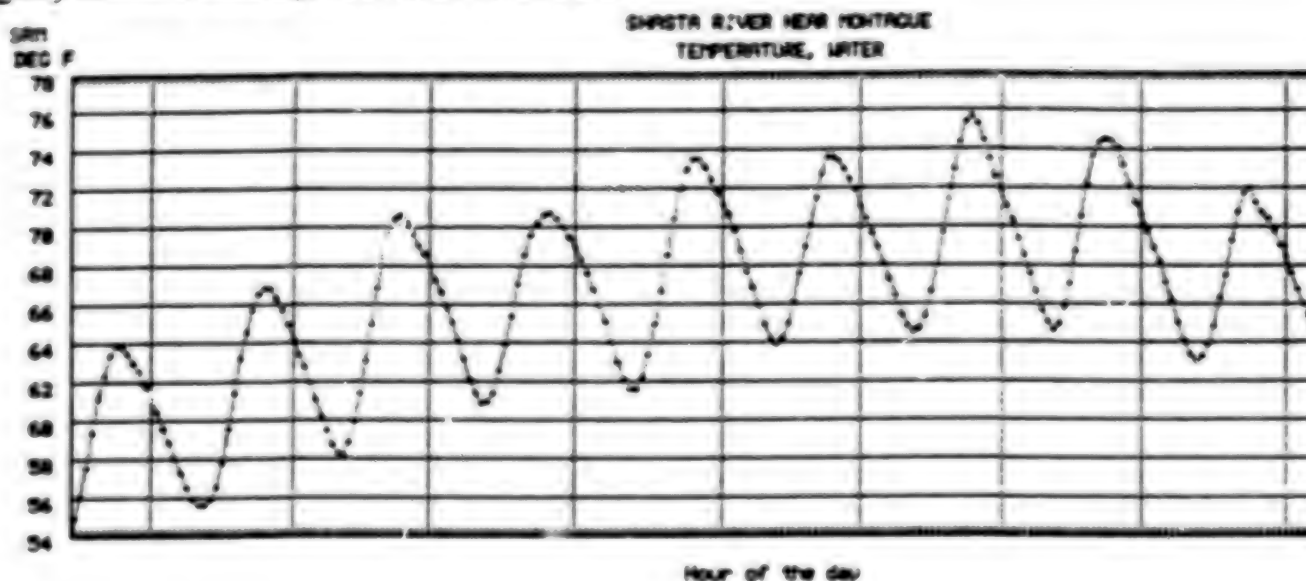
[Weather Forecasts](#)

[Text Reports](#)

SHASTA RIVER NEAR MONTAGUE (SRM)

Elevation: 2426' · SHASTA R basin · Operator: CA Dept of Water Resources

Query executed Saturday, 05/27/2000 09:10 PDT



From 10 days ago to now

[Real-Time SRM data](#) | [Daily SRM data](#)

Warning! This has not been reviewed for accuracy. Graphics produced using gd

[Real-Time Data](#) | [Group of Real-Time Stations](#) | [Daily Data](#) | [Group of Daily Stations](#)
[Monthly Data](#) | [Historical Data](#) | [Custom Graph Plotter](#) | [Text Reports](#)

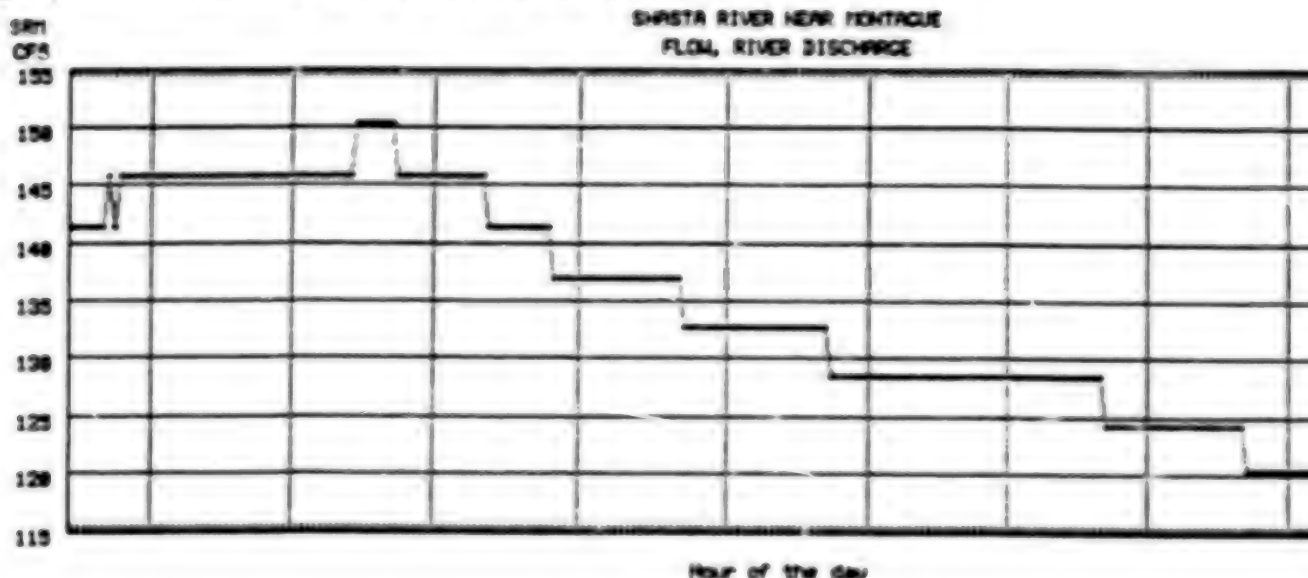
California Data Exchange Center

Mail to: Webmaster

SHASTA RIVER NEAR MONTAGUE (SRM)

Elevation: 2426' · SHASTA R basin · Operator: CA Dept of Water Resources

Query executed Saturday, 05/27/2000 09:12 PDT



DRAFT----Matrix of Potential Limiting Factors for the Shasta River (4/11/2000) D

Direct Limiting Factors		Month to Hwy 263	Hwy 263 to Noy's Dam	Noy's to Parks Cr.	Parks to Downwell Dam	Lake Shastina	Shasta above LA Shastina	Yreka Creek	Little Shasta River	Parks Creek	All Other Tributaries	Ranking within Category*
I ACCESS TO HABITAT												
A	Blockage by dams / weir (large & small)	x	x	x	x	x	x	x	x	x		13
B	Blockage by natural barriers related to flow						x	x	x	x	x	2
C	Subadults can become stranded in pools	x						x	x			0
D	Thermal barriers to migration	x	x					x	x	x		9
II FLOW												
A	Low summer flow due to water management	x	x	x	x	n/a	x	x	x	x	x	
B	Low summer flow due to natural conditions	x	x	x	x		x	x	x	x	x	
C	Low winter flows-loss of peak flows					x		x	x	x	x	
D	High winter flows	x	x	x	x		x		x	x		
E	Change in natural storage			x	x	x		x	x	x	x	
F	Change in groundwater storage			x								
III WATER QUALITY												
A	High Temperature	x	x	x	x	x	x	x	x	x	x	20
B	Low Dissolved Oxygen	x	x	?	x	x	?					11
C	pH, alkalinity & conductivity											0
D	Contaminants (including urban runoff & bioaccumulation)		x?				x	x				0
E	Excessive Nutrients		x	x	x	x	x	x	x	x	x	4
G	Turbidity (both organic and inorganic)		x	x	x	x	?	x	x	x	x	0
H	Return flows affect water quality		x	x	x		x	x	x	x	x	7
I	Effect of water quality on eggs during spawning, incubation and in vivo	x	x	x	x					x	x	0
IV GEOMORPHOLOGY												
A	Lack of spawning gravel	x	x	x	x	n/a		x	x	x		8
B	Excessive fine sediment supply	x	x	x	x		x	x	x	x	x	8
C	Coarse Sediment Transport	x	x	x?			x			x?		2
Ca	Coarse Sediment transport (aggradation)	x	x	??			x			x?		2
Cb	Coarse Sediment transport (recol scour)											
Cc	Lack of Coarse Sediment transport											
D	Maintenance of Dynamic Alluvial Processes	x	x	x	x		x	x	x	x	x	18
Da	Channel shape / stability											
Db	Side channels											
Dc	Aquatic vegetation (stability)		x	x					x	x		
F	Mining effects (tailings piles & dredge mining)	x	x					x				0
G	Absence of Large Woody Debris	x	x?									0
V WATERSHED & UPSLOPE PROCESSES												
A	Land management (conversion of original landscape)											
Aa	Agricultural activities		x	x	x	x	x	x	x	x	x	18
Ab	Timber Management activities						x	x	x	x	x	0
Ac	Public Roads/Railroads impacts	x	x	x	x	x	x	x	x	x	x	1
Ad	Fire Management	x	x	x	x	x	x	x	x	x	x	0
Ae	Water development		x	x	x	x	x	x	x	x	x	7
Af	Housing and Urban Development		x		x	x	x	x	x	x	x	3
Ag	Industrial and Municipal Development		x				x	x				2
Ah	Recreation					x						0
B	Upslope Products											
Ba	Large Woody Debris	x	x	x	x	x	x	x	x	x	x	6
Bb	Gravel quantities (excess)						x	x	x	x	x	12
Bc	Water development		x	x	x	x	x	x	x	x	x	18

DRAFT----Matrix of Potential Limiting Factors for the Shasta River (4/11/2000) D

Direct Limiting Factors		Ranking within Category*									
		Mouth to Hwy 263	Hwy 263 to Hwy's Dam	Hwy's to Parks Cr	Parks to DeWittell Dam	Lake Shastina	Shasta above L.A. Shastina	Yreka Creek	Little Shasta River	Parks Creek	All Other Tributaries
VI BIOLOGICAL INTERACTIONS											
A	Redd superimposition	x									0
B	Density dependent factors	x	?	?	?						9
C	Predation by native species	x	x	x	x			x	x	x	0
D	Exotic species (including fish, snails, molluscs, etc.)	x	x	x	x			x	x	x	5
E	Food production										0
F	Smolts blocked to outmigration	x	x			x	x	x	x	x	4
G	Parasites	x	?	?	?			?	?	?	0
H	Disease	?	?	?	?	?	?	?	?	?	0
I	Water quality effects on disease/condition (chronic/acute)	x	x					x	x	x	10
J	Flow effects on disease/condition	x	x		x		x	x	x	x	2
VII MICROHABITAT LIMITATIONS											
A	Lack of Depth	x	x		x		x	x	x	x	3
B	High Velocity	x									1
C	Lack of Cover	x	x	x	x	n/a	n/a	x	x	x	7
D	Substrate	x	x	x	x		n/a	x	x	x	14
E	Lack of Holding Habitat	x		x			n/a	x	x	x	3
F	Redd De-watering in Spring						n/a		?	?	0
VIII STREAM DIVERSIONS											
A	Entrapment (need to install/maintain screens)	x	x	x	x	x	x	x	x	x	5
B	Loss of cold water		x	x	x		x	x	x	x	15
C	Effect of diversion on water quality (including temp)	x	x	x	x		x	x	x	x	3
D	Return flows affect water quality		x	x	x		x	x	x	x	13
IX GROUNDWATER											
A	Impacts of groundwater pumping and spring diversion/utilization on flow		x	x	x	n/a	x	x	x	x	12
B	Impact of groundwater on spring flow, river flow and water quality	x	x	x	x	n/a		x	x	x	18
X ACCIDENTAL MORTALITY											
A	Scientific investigations										
B	Catch and Release Angling										
XI OUT OF BASIN											
A	Legal harvest										
B	Impacts of hatchery fish (competition, disease, release timing)										
C	Predation										
XII THERMAL REFUGIA											
A	Reduction in amount and quality of thermal refugia		x	x	x		x	x	x	x	18

*Ranking relative to topics within the categories. Cannot compare ranks between categories.

SHASTA RIVER HABITAT IMPROVEMENT WORK

Spawning Riffle Projects

Slide Hollow	\$94,000
Tire Flat	\$92,000
Salmon Heaven & Gillen	\$135,000
Yreka Creek (3 Projects)	\$78,000
total	\$399,000

Fish Ladders

Everret Flock Dam	\$5,000
Norman Flock Dam	\$5,000
Montague Pumps Dam	\$5,000
Hart (Little Shasta)	\$2,000
total	\$17,000

Fish Screens

Soules (Little Shasta)	\$11,000
Hart (Little Shasta)	\$9,000
Little Shasta	\$10,000
East Flock	\$11,000
West Flock	\$12,000
Williams	\$9,000
Montague Pumps	\$47,000
Jenkins	\$12,000
Grenada Pumps	\$30,000
Parks Creek (4 Screens)	\$42,000
total	\$193,000

Bank Stabilization and Reveg.

Yreka Creek	\$7,000
Shasta River (2 Projects)	\$27,000
total	\$34,000

Grand Total: \$667,000**

Studies (recent)

Water Quality Inventory	\$24,000
total	\$24,000

**Construction costs only.
Maintenance of projects
is estimated at over \$300,000

All of the tasks listed in the CRMP Coordinator Contract for 1999 were both important and necessary to long term progress. Some of the extra tasks undertaken that could not have been predicted in advance may have been even more important.

The opportunity to meet for several hours with Congressman Herger and his staff came at a critical time when bipartisan support was needed for the president's Salmon Recovery Initiative. That initiative brought 9 million dollars to California for the year 2000 alone. When meeting with Congressman Herger, we were able to focus on an array of cooperative restoration projects, using the Shasta as an example. That was an opportunity that could not have been predicted, yet was of critical and ongoing importance to salmon coast wide.

Other actions such as arranging the marriage between DWR and BOR for satellite access, securing DWR financial support for outmigrant counting, formation of the sub-committee with many subsequent meetings to do limiting factor prioritization, the initiation of work on TMDL's, etc. all required the flexibility to seize opportunities, and carry them through to completion.

The Klamath River Basin Fisheries Task Force has created the opportunity for these advances by supporting the ground-up restoration work of the Shasta CRMP. Ongoing support of that nature will be critical if that progress is to continue. One needs only look at the short list (attached) of fishery projects done prior to 1987 to see what a difference funding focused on developing restoration projects can make.

Summary of Expenditures

A total of \$25,000 was available from this grant. Approximately \$2,262 was carried over into 2000. An additional \$18,477 was available and was spent from the 1998 CRMP grant. The total spent on supporting the Shasta CRMP in developing restoration programs in 1999 was \$41,215. See attached budget sheet.

Appendices

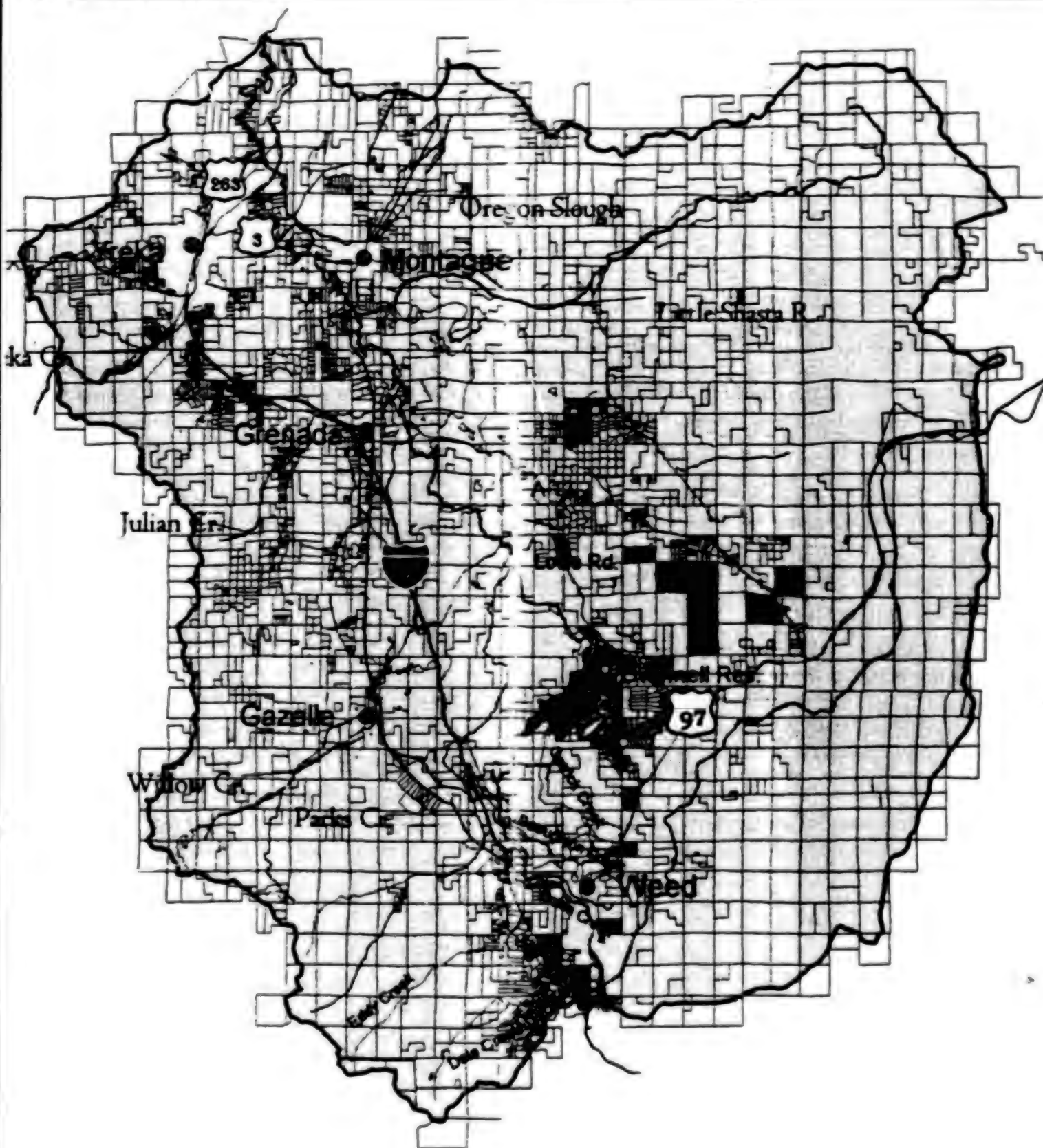
1. Watershed map showing outlines of all 13,000 assessors parcels in unincorporated areas of Shasta Watershed.
2. Watershed map showing locations of historic aquatic invertebrate monitoring.
3. List of historic invertebrate monitoring sites.
4. Summary sheets describing historic invertebrate data.
5. Letter and map sent to Calif. Fish and Game Commission re: adequacy of existing fishing closure at mouth of Shasta River.
6. Printouts of DWR web pages with real-time flow data from the watermaster's weir near Montague on the Shasta River.
7. Draft prioritization matrix for limiting factors for salmonids in Shasta River.
8. List of Department of Fish and Game Restoration Projects on Shasta prior to 1987.
9. Sample Newsletter

U.S. Fish & Wildlife - P.O. Box 1006 - Yreka, CA 96097				3017	
CRMP 98-PC-03// #14-48-11333-97-J029					
Contract figures					
	98-PC-03	1998	1999	Total	Over/Under
	Budget	Expenses	Expenses	Expenses	
Personnel Costs	\$22,505.00	\$11,606.11	\$16,116.62	\$27,724.73	(\$5,219.73)
Exp. Equipment/Sppls	\$6,400.00	\$2,118.94	\$608.79	\$2,727.73	\$3,672.27
Travel	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
General Administration	\$4,086.00	\$786.90	\$1,751.64	\$2,538.54	\$1,547.46
Annual Totals	\$32,991.00	\$14,513.95	\$18,477.05	\$32,991.00	(\$0.00)
U.S. Fish & Wildlife - P.O. Box 1006 - Yreka, CA 96097					
Shasta River CRMP 99-PC-02/14-48-113339J041 (10/1/98-1/30/00)				3042	
Contract Totals					
	Contract	1999	2000	Total	Over/Under
	Expenses	Expenses	Expenses	Expenses	
Personnel Costs	\$17,536.00	\$17,887.80	\$1,944.91	\$19,832.71	(\$2,296.71)
Exp. Equipment/Sppls	\$1,270.00	\$1,399.30	\$0.00	\$1,399.30	(\$129.30)
Travel	\$2,935.00	\$1,384.19	\$90.51	\$1,474.70	\$1,460.30
General Administration	\$3,259.00	\$2,067.13	\$226.16	\$2,293.29	\$965.71
Annual Totals	\$25,000.00	\$22,738.42	\$2,261.58	\$25,000.00	\$0.00
Total spent on CRMP support in 1999:		\$41,215.47			

Shasta Watershed Planning Map

Topic- Assessors Parcels

Reviewer Webb



Shasta Watershed Planning Map

Topic Historic Aquatic Invert. Sampling Sites Reviewer Webb



Shasta River Aquatic Invertebrate Monitoring sites

Site ID No.	Description	Location	Notes
1	Shasta Near Edgewood	T42N R5W S20	Historic data site
2	Shasta Below Dwinell	T42N R5W S25	Historic data site
3	Shasta River and Co. Road A-12	T44N R6W S23	Historic data site
4	Shasta River above confluence with Little Shasta	T44N R6W S3	Historic data site
5	Shasta River below confluence with Little Shasta	T45N R6W S33	Historic data site
6	Oregon Slough at Montague-Ager Rd.	T45N R6W S22	Historic data site
7	Shasta River above confluence with Yreka Creek	T45N R6W S7	Historic data site
8	Yreka Creek at Anderson Grade Rd.	T45N R6W S1	Historic data site
9	Shasta River near confluence with Klamath	T46N R6W S19	Historic data site
10	Little Shasta at Ball Mt. Rd.	T42N R4W S25	Historic data site
25	Shasta Above Big Springs Creek	T43N R5W S8	Historic data site

LSR at Ball Mt Rd	5	18	73	5/18/73	560	1445	1.3	??	469	79667
LSR at Ball Mt Rd	9	7	73	9/7/73	874	1040	0.91	4	623	83846
LSR at Ball Mt Rd	10	20	77	10/20/77	3174	??	1.41	3	610	n/a
OS near Montague	5	17	73	5/17/73	561	740	1.82	??	176	79672
SR above LSR	5	18	73	5/18/73	560	1350	1.75	??	376	79668
SR above LSR	10	20	77	10/20/77	3174	??	1.69	8	280	n/a
SR above LSR	8	28	81	8/28/81	4569	1100	1.49	8	2730	
SR above LSR	4	28	82	4/28/82	4814	1300	1.29	8	1041	
SR above YC	5	18	73	5/18/73	560	??	1.38	??	715	79671
SR above YC	9	8	73	9/8/73	873	1645	1.22	2	298	83844
SR above YC	4	27	82	4/27/82	4813	1230	1.08	8	818	
SR above YC	7	27	82	7/27/82	4904	1330	1.68	8	913	
SR above YC	8	28	81	8/28/81	4569	1230	1.68	8	4452	
SR above YC	4	18	83	4/18/83	5169	1300	1.47	8	916	
SR above YC	6	14	83	6/14/83	5236	1330	1.81	8	310	
SR below Dwinell	4	18	73	5/18/73	560	1415	0.84	??	417	79675
SR below Dwinell	9	7	73	9/7/73	874	910	1.11	4	685	83847
SR below Dwinell	10	20	77	10/20/77	3174	??	1.61	3	200	n/a
SR below Dwinell	8	28	81	8/28/81	4569	945	0.34	8	3147	
SR below Dwinell	4	27	82	4/27/82	4813	930	0.17	8	485	
SR below Dwinell	7	27	82	7/27/82	4904	945	1.08	8	1212	
SR below Dwinell	4	18	83	4/18/83	5169	1000	0.18	8	1539	
SR below Dwinell	6	15	83	6/15/83	5237	930	0.86	8	2042	
SR below LSR	7	27	82	7/27/82	4904	1230	1.59	8	1420	
SR below LSR	4	18	83	4/18/83	5169	1200	1.34	8	686	
SR below LSR	9	15	83	6/15/83	5237	1145	1.86	8	594	
SR below YC	5	18	73	5/18/73	560	1545	1.54	??	712	79670
SR near Big Springs	5	17	73	5/17/73	561	1350	1.17	??	390	79669
SR near Big Springs	8	28	81	8/28/81	4569	900	1.34	8	1684	

Sheet2

SR near Big Springs	4	27	82	4/27/82	4813	1015	0.97	8	157		
SR near Big Springs	7	27	82	7/27/82	4904	1045	0.81	8	4078		
SR near Big Springs	4	18	83	4/18/83	5169	1000	1.46	8	358		
SR near Big Springs	6	15	83	6/15/83	5237	1015	1.68	8	491		
SR near Grenada	8	26	81	8/26/81	4569	1030	1.47	8	811		
SR near Grenada	4	27	82	4/27/82	4813	1100	1.53	8	1890		
SR near Grenada	7	27	82	7/27/82	4904	1145	1.64	8	181		
SR near Grenada	4	18	83	4/18/83	5169	1130	1.61	8	271		
SR near Grenada	6	15	83	6/15/83	5237	1100	1.69	8	622		
SR near mouth	9	15	71	9/15/71	0	??	1.4	4	64		73273
SR near mouth	6	16	72	8/16/72	225	??	1.36	??	422		74464
SR near mouth	5	17	73	5/17/73	561	??	1.87	3	229		79674
SR near mouth	8	26	81	8/26/81	4569	1300	0.53	8	4944		
SR near mouth	4	27	82	4/27/82	4813	1400	1.87	8	269		
SR near mouth	7	28	82	7/28/82	4905	730	1.5	8	5513		
SR near mouth	4	18	83	4/18/83	5169	1345	1.56	8	1099		
SR near mouth	6	15	83	6/15/83	5237	1415	1.68	8	352		
SR near mouth	9	0	71	9/00/71		??	0.77	4	1046		73274
YC above SR	5		73	5/16/73	560	??	1.18	??	245		79673
YC above SR	9		73	9/8/73	673	1140	1.16	4	1129		83645
YC above SR	8		81	8/26/81	4569	1200	1.61	8	1177		
YC above SR	4		82	4/27/82	4813	1200	0.8	8	83		
YC above SR	7		82	7/27/82	4904	1710	0.63	8	13427		
YC above SR	4		83	4/18/83	5169	1245	1.12	8	194		
YC above SR	6		83	6/15/83	5237	1300	1.34	8	1811		

Shasta CRMP
PO Box 459
Montague, CA 96067

March 18, 1999

California Fish and Game Commission
1416 Ninth St.
Sacramento, Ca

Greetings,

The Shasta CRMP has been working on fishery restoration measures in the Shasta Valley since 1991. Our primary focus is on land management practices in the Shasta Valley itself, but we also provide input in other areas of fishery management as it affects our success.

We understand that you have begun your process of review of salmon regulations. We would like to make the following observations and suggestions:

1. During this past season, sport fishermen informed us that apparently significant numbers of egg-bearing female Fall Chinook were being caught at lengths less than the 24 inch cut-off line separating 2-year-old from older fish. It appears that growth rates in the ocean were not what had been hoped for, causing significant numbers of three-year-old Fall Chinook salmon to return at less than 24 inches.

This reduced growth problem was compounded by recent changes to the sport fishing regulations that this year increased the cut-off line between two-year-olds and adults from 22 to 24 inches.

We believe that the cut-off between two year old and adult salmon needs to be reduced to no more than 22 inches, possibly less.

Low growth rates tend to coincide with periods of low survival. Hence years in which three-year-olds are undersized are the worst possible times to lose natural spawners. The increasing likelihood of ESA listings requires that a consistently more conservative approach be instituted for protection of wild stocks.

In addition to the above length change, we feel that the role of the two-year-olds should be re-examined. It appears to us that they can be an important component of the spawning population, particularly where low flows make passage difficult for larger male fish. It may not make sense to allow an unrestricted harvest of them based on the assumption that they do not spawn.

Finally, in years when water temperatures are high, there may be a substantial delayed catch and release mortality of adult salmon from people fishing for two-year-olds, again impacting adult spawners.

We would like the entire subject of unrestricted two year old salmon harvest to be re-examined using best available data on two year old spawning, Klamath River water quality data, effect of

Klamath River temperatures on catch and release mortality, and the consequences continued failure to rebuild salmon numbers in light of the federal Endangered Species Act.

2. Several years ago the Fish and Game Commission wisely closed the mouths of the Shasta, Scott and Salmon Rivers to fishing, in an effort to protect dwindling natural runs. Additional data gathered since then, from both habitat typing done by the USFWS and aerial reconnaissance by Dr. Hiram Li indicates that for the Shasta that protection is not adequate, and needs to be extended.

The existing 500-foot closure includes only a small pool at the mouth of the Shasta which is less than six feet deep. It is too small to hold the numbers of fish that are often waiting in the Klamath for conditions in the Shasta to be favorable (see graph from DFG Biological Needs Assessment, Shasta Watershed plan, along with second graph from DFG records at the Shasta Racks).

In addition, in those years when September water temperatures are too high for the salmon to enter the Shasta, the water in the pool immediately downstream of the Shasta is also going to be too high for them to stay (see map and data from Dr. Hiram Li).

The net result is that there are no adequate protected holding areas in the Klamath for fish waiting to return to the Shasta.

Here again, the looming risks of ESA listings demand that all reasonable measures be taken to protect natural stocks at risk.

The nearest suitable holding areas downstream of the Shasta are approximately 6200 feet downstream, just above the mouth of Long Gulch. A closure to that point would be easy to describe and recognize, either from the road (HY 96) or the Klamath River, facilitating compliance.

We believe that fishing needs to be closed in the Klamath River from the Highway 263 bridge just upstream of the Shasta River mouth, to Long Gulch, 6200 feet downstream, to provide suitable deep pool resting and holding areas for salmon needing to return to the Shasta River.

We have included a map showing the Klamath River below the Shasta, with instream habitat types mapped using data collected by the USFWS.

For comparison, we have included a map of the Klamath below Iron Gate Dam where the existing closure is 3500 feet long in order to protect the hatchery stocks.

Natural stocks now need greater protection than that long afforded to hatchery stocks.

3. Finally, we would like to request a clarification of harvest numbers reported annually by the DFG in its Klamath River "megatable". There is no specific entry for Karuk harvest. Is it included in the sport harvest numbers, or is it not reported at all?

If it is not reported, how are salmon allocated for this fishery?

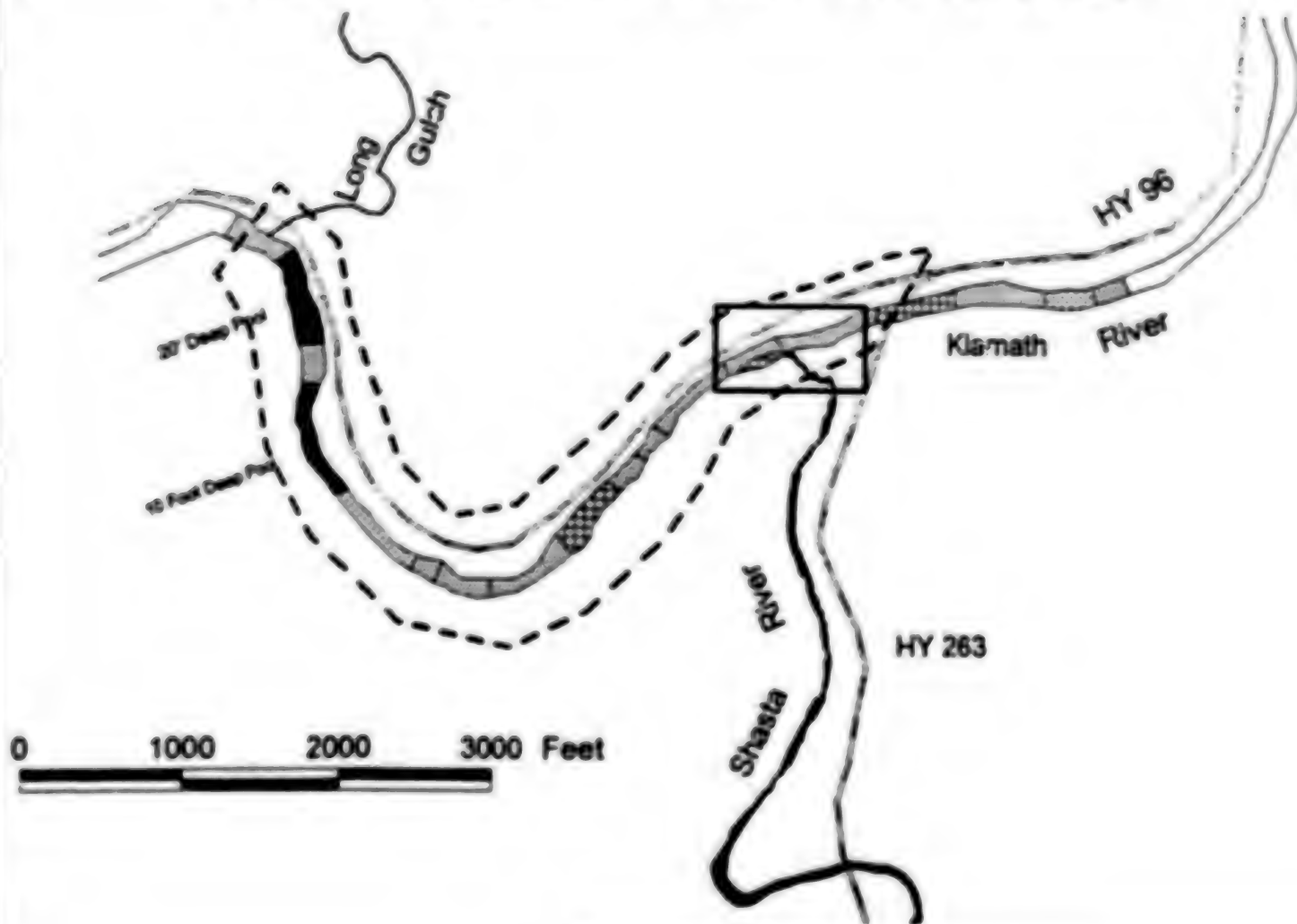
We would appreciate a written response on these three areas.

Thank you very much.

Sincerely Yours,

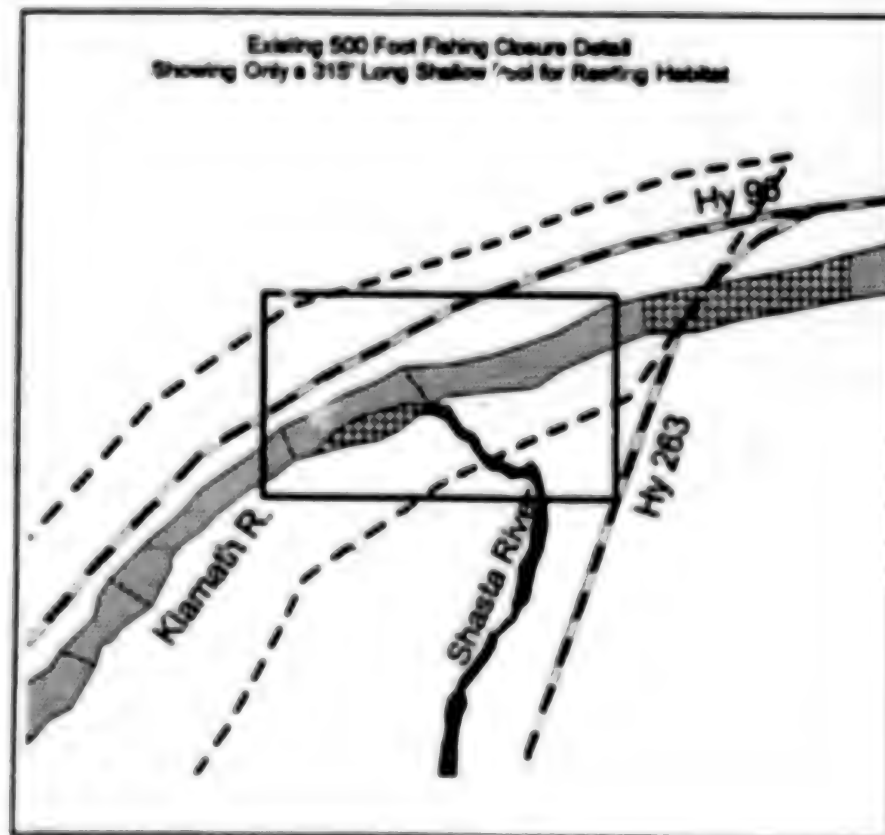
Blair Hart,
Chairman, Shasta CRMP

Potential Resting Habitat for Shasta River Fall Chinook



Klamath R. Habitat

- Deep Pool > 8'
- Mixed Pool-Riff-Riffle
- Shallow Pool < 8'
- not specified
- Proposed Fishing Closure
- 500' Fishing Closure
- Shasta River
- Roads



Shasta River CRMP Newsletter

March, 1999

Protecting Landowners By Saving Fish

This newsletter marks a major shift in efforts for the Shasta Coordinated Resource Management and Planning (CRMP) group. Until now, we have mostly involved just the people and land immediately bordering the main Shasta itself. It's past time that we add more of the other people in the Shasta Valley who also have an interest in the river and its water. Our first step in that direction is to add to our mailing list each person in the irrigation districts in the Shasta Valley, and invite each of you to participate in our meetings.

Coordinated Resources Management and Planning is a general approach people can use to work voluntarily together on to solve shared problems. Generally, CRMPs work on natural resources conflicts that involve people from a variety of backgrounds and with different goals. A CRMP group gives those people an opportunity to discuss natural resource problems. As they come to understand each others' needs, they often can find common ground for resource-related improvements. No matter what, everything is voluntary, and the CRMP has no legal authority, nor will it attempt to force anyone to do anything.

In the case of the Shasta River, the CRMP process focuses on water and salmon. Unfortunately, there is often not enough water to easily meet everyone's needs. And the quality of the water in the river is not what many people (or fish) would like. Somehow, we as neighbors must find ways to meet each others' needs. The Shasta CRMP is committed to finding win-win solutions.

The Shasta CRMP was started by local ranchers in 1991. Since then we have reached a good understanding of the problems to be solved:

(1) not enough water to meet all needs in some years; (2) water that gets too hot for salmon to survive; (3) water that contains too little dissolved oxygen for salmon to survive; (4) too much good soil going down the river; (5) not enough logs, roots, and sticks trailing in the water to give small fish a place to survive; (6) physical hazards in the river that can reduce salmon survival, including dams, unscreened diversions, and fish-handling operations.

These problems are the collective unintended result of many good people in the Shasta Valley and elsewhere trying to make a living. Any solutions devised must include the opportunity for those people to continue to make their livings.

We also have to recognize that the primary reason for conflict is that our neighbors downstream or on the Coast are no longer able to make a living because there aren't enough fish. We have to find ways to provide both irrigation water and fish. It isn't easy, and it hasn't been quick. By working together we will find ways to make neighborly choices.

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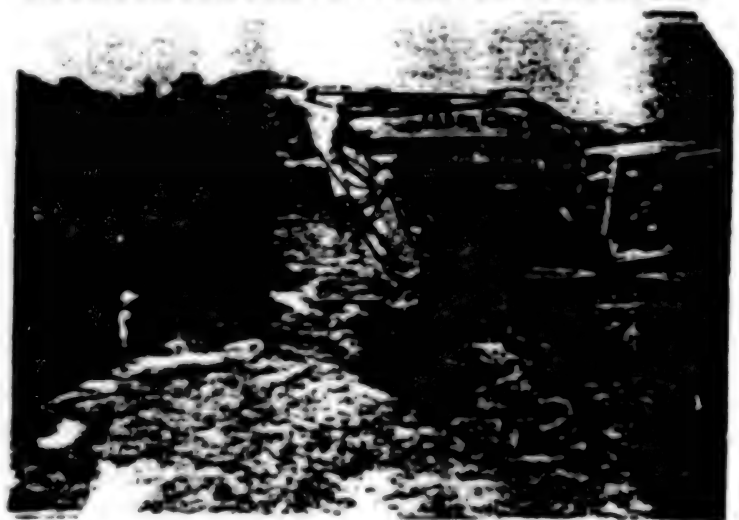


Photo: Ray Oscar

An improved fish screen and pump for Bruce and Boyd Flock. Tim Louie running the excavator, Jim Whelan in the water (Summer '98).

Pulsed Flows

Well, here we are, nearly April 1 and practically the start of the irrigation season. At least it looks like another wet year. But, just in case it's not, we've begun preparing for pulsed flows in the Shasta.

As most of you remember, back in 1993 we started using pulsed flows to encourage salmon to hurry their outmigration towards the ocean. Our concern is that if they linger in the Shasta or Klamath too long, they are likely to die when water temperatures climb in the early summer. By stopping irrigation use of the river for a few days and by removing the flashboard dams, we can create the appearance of a spring freshet, which seems to be quite effective at encouraging the young salmon to move downstream.

I have already contacted the major irrigators who must hold public meetings—Montague Irrigation District, Shasta Water Association, and the Grenada Irrigation District. Each is ready to participate if river conditions warrant. As we move into the irrigation season, I will be contacting the owners of the flashboard dams along with other irrigators along the river, to ask for their support and participation.

Our current targets for two pulsed flows are about May 10th and the first week of June. We'll keep you posted.



Photo: Ray Oscar

Mike Deas from UC Davis, Dave Webb, and Bruce Flock at a dam the Flocks share with other water users near Hwy. 3.

Local River Monitoring Station for Your Use

For several years the Shasta CRMP operated a river monitoring station in the Shasta River near Montague. It's there for all of you to use, so you can keep tabs on air and water temperatures and flows. Call, listen to the current conditions, and keep an eye on your river. The number is 439-0416.

For those of you with computers, you can also contact it via modem and download stored data, including air and water temperatures, conductivity, gauge height, and solar insolation. If you are interested, call Dave Webb at 926-2460. He will get you set up with the right program.

Erosion Concerns

Over the last two months I have been near the mouth of the Shasta several times. I noticed during the last two high water periods (Jan. 22-23, and Feb. 7, 1999) that the river was pretty muddy. On my way home both times, I stopped at A12 to see what the river looked like there. Even though it was beginning to come out of its banks, it was pretty clean. It was apparent that a lot of soil was getting into the water column between A12 and the top of the canyon where Highway 263 crosses the Shasta just north of Yreka. I probably should have stopped at every road crossing and tried to divide the river into short lengths, but it was late, and I expected the water would be muddy all the way to Parks Creek.

Of course I wasn't able to tell if the river was actively eroding someone's stream bank or just picking up fine materials that had settled out on the bottom during the summer. In either case, it looked like landowners somewhere below A12 had lost a lot of good soil either from sheet erosion from their fields or by losing chunks of bank along the stream. Some of it, of course, could also have come down Yreka Creek or the Little Shasta.

Fine sediment (soil) in the water can create problems for salmon by settling out into spawning gravel and killing the eggs. Loss of fine sediment can cause problems for landowners, since it means that productive soil is going down the river.

It looks like everyone might benefit if we could find ways to reduce the erosion. I'll try to report back after the next high water.

It's A Date Page
Up-coming events for your calendar...

Range and Ranch Water Quality Workshop

COMING YOUR WAY...an informative session on the RANGELAND WATERSHED PROGRAM.

The session will focus on the development of the California Rangeland Water Quality Management Plan, what's in it for you and how to get one!! An informational meeting is scheduled at the **Greenhorn Grange on March 30th at 7:00 p.m.** Actual workshop dates will be determined after the March meeting. Watch for publicity or call your Shasta Valley Resource Conservation District at 842-6121 (endorsed by the California Cattlemen's Association).

A very successful course was recently taught in Scott Valley by Dan Drake of the UC Extension Office and Randy Seelbrede of the Natural Resource Conservation Service. Twenty ranchers and land owners have participated. They were given soil maps and aerial photos to begin the two-evening course. Participants looked at the possible effects of their management practices on water quality. Since the state-level approval of the California Rangeland Water Quality Management Plan in 1995, the livestock industry and rangeland owners and managers are now implementing the plan locally. We still have an opportunity prove that *voluntary compliance* is a viable alternative to *regulatory* prevention of nonpoint source pollution. The plan provides for three approaches to voluntary compliance: Letter of Intent, Nonpoint Source Management Plan, and a Recognized Nonpoint Source Management Plan. Voluntary compliance is the first of three options for achieving water quality goals. If voluntary compliance is unsuccessful, the Regional Water Quality Control Boards have the authority to invoke the more stringent options. It's now time for all local ranchers and landowners to get their management strategies in place. Dan and Randy are prepared to answer your questions about your available options.

Members of the **Shasta River Water Association, Grenada Irrigation District, and Montague Water Conservation District** are encouraged to attend the next CRMP meeting. At this meeting water district members can personally interact with their neighbors and will be able to discuss water issues in the Shasta Valley. In the meantime, readers are all encouraged to contact CRMP with questions and concerns about the future and how you can help yourselves through efforts to restore the Shasta River.

Shasta River CRMP 1999 Quarterly Meetings

4th Wednesday @ 7:00p.m.—May 26, Aug. 25, Nov. 24
meeting site varies, for info call Dave Webb 926-2460

TREE SALE

DECIDUOUS TREES

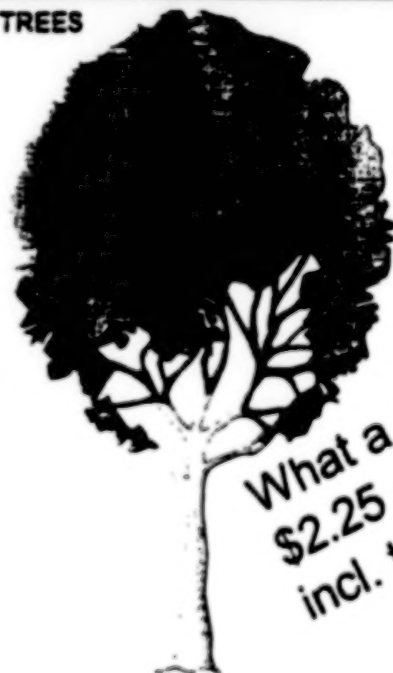
Black Locust
Bur Oak
Column Poplar
Crab Apple
Golden Willow
Green Ash
Hackberry
Hybrid Poplar
Lacebark Elm
Russian Olive

EVERGREEN TREES

Arizona Cypress
Austrian Pine
Baker Cypress
Incense Cedar
Jeffrey Pine
Sequoia Redwood

SHRUBS

Bush Honeysuckle
Caragana
Chokecherry
Columbine
Desert Peach
Golden Currant
Lilac
Nanking Cherry
Sand Cherry
Serviceberry
Sumac
Wild Rose



What a deal!
\$2.25 each
incl. tax

Plants are fully-rooted in 1 qt. containers. Minimum order is 10 trees or shrubs. All plants must be ordered and prepaid by March 26. Information packets are available for pick-up at the NRCS (SCS) office at 215 Executive Ct. (behind Blue Goose station) in Yreka, or call 842-6121 ext. 117. A portion of the sale proceeds is donated towards a scholarship for a local high school student. Trees will be available for pickup April 9-10 only.

A New Restoration Program on Our Horizon?

For the last 8 years, the Shasta River CRMP has been working with landowners along the Shasta with two goals: 1) restore the salmon and steelhead productivity of the Shasta River, in order to 2) protect the existing land uses in the Shasta Valley.

During that time we have regularly pointed out to state and federal agencies that accomplishing goal #1 will require much more in terms of buffer strips and effort than the few people living along the river could afford to give the rest of society for free.

At last, the federal government has finally decided to expand the 15 year old Conservation Reserve Program (CRP), which many local people have enrolled through the ASCS office, to include a special program called the Conservation Reserve Enhancement Program (CREP). It has two key provisions that are important to us: 1) It can be defined locally to deal with local needs; and 2) it allows for land rental rates to be set locally.

Any of you who looked into the CRP in the past no doubt quickly realized that you would only be paid about ten cents on the dollar if you wanted to set aside productive land. And, of course, most of you decided that you couldn't afford to do that.

We have been working with interested landowners from the Shasta and Scott Valleys to define a CREP program that will actually create an incentive for people to protect water quality and fish habitat.

By "incentive" we mean payment of real, free-market pasture rental rates for the land set aside as buffer strips along rivers and streams, along with additional compensation for any extra management those buffers may take. Our goal in this program is to make it a sound economic decision to protect water quality and fish habitat.

We should have a draft ready for wider review soon. We'll then submit our proposal to Washington and Sacramento for approval. We're optimistic! Look for more information in our next newsletter.

goldfish A seven inch long piece of gold in the shape of a fish  was found on the Scott River on January 27, 1855, by James Lindsay and T. L. Wade. It weighed 187 oz. and was worth \$18.74 per ounce. The "fish" would be worth about \$54,230 today.

.....
The Shasta River CRMP is an organization of landowners in the Shasta Valley. Public input is vital. "CRMP serves the Shasta Valley watershed from the mouth of the river to south county. We're all neighbors and we can help each other! Come to our meetings and share your ideas, comments, questions, and suggestions."

Shasta River CRMP Newsletter
Coordinated Resource Management Planning Council

c/o 215 Executive Court, Yreka, CA 96097

BULK RATE
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